



March 2008

2SA1962/FJA4213

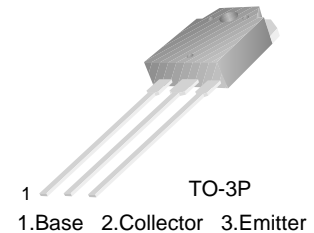
PNP Epitaxial Silicon Transistor

Applications

- High-Fidelity Audio Output Amplifier
- General Purpose Power Amplifier

Features

- High Current Capability: $I_C = -15A$
- High Power Dissipation : 130watts
- High Frequency : 30MHz.
- High Voltage : $V_{CEO} = -230V$
- Wide S.O.A for reliable operation.
- Excellent Gain Linearity for low THD.
- Complement to 2SC5242/FJA4313.
- Thermal and electrical Spice models are available.
- Same transistor is also available in:
 - TO264 package, 2SA1943/FJL4215 : 150 watts
 - TO220 package, FJP1943 : 80 watts
 - TO220F package, FJPF1943 : 50 watts



Absolute Maximum Ratings* $T_a = 25^\circ C$ unless otherwise noted

Symbol	Parameter	Ratings	Units
BV_{CBO}	Collector-Base Voltage	-230	V
BV_{CEO}	Collector-Emitter Voltage	-230	V
BV_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current	-15	A
I_B	Base Current	-1.5	A
P_D	Total Device Dissipation($T_C=25^\circ C$) Derate above $25^\circ C$	130 1.04	W W/ $^\circ C$
T_J, T_{STG}	Junction and Storage Temperature	- 50 ~ +150	$^\circ C$

* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

Thermal Characteristics* $T_a=25^\circ C$ unless otherwise noted

Symbol	Parameter	Max.	Units
$R_{\theta JC}$	Thermal Resistance, Junction to Case	0.96	$^\circ C/W$

* Device mounted on minimum pad size

h_{FE} Classification

Classification	R	O
h_{FE1}	55 ~ 110	80 ~ 160

Electrical Characteristics* $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
BV_{CBO}	Collector-Base Breakdown Voltage	$I_C=-5\text{mA}, I_E=0$	-230			V
BV_{CEO}	Collector-Emitter Breakdown Voltage	$I_C=-10\text{mA}, R_{BE}=\infty$	-230			V
BV_{EBO}	Emitter-Base Breakdown Voltage	$I_E=-5\text{mA}, I_C=0$	-5			V
I_{CBO}	Collector Cut-off Current	$V_{CB}=-230\text{V}, I_E=0$			-5.0	μA
I_{EBO}	Emitter Cut-off Current	$V_{EB}=-5\text{V}, I_C=0$			-5.0	μA
h_{FE1}	DC Current Gain	$V_{CE}=-5\text{V}, I_C=-1\text{A}$	55		160	
h_{FE2}	DC Current Gain	$V_{CE}=-5\text{V}, I_C=-7\text{A}$	35	60		
$V_{CE}(\text{sat})$	Collector-Emitter Saturation Voltage	$I_C=-8\text{A}, I_B=-0.8\text{A}$		-0.4	-3.0	V
$V_{BE}(\text{on})$	Base-Emitter On Voltage	$V_{CE}=-5\text{V}, I_C=-7\text{A}$		-1.0	-1.5	V
f_T	Current Gain Bandwidth Product	$V_{CE}=-5\text{V}, I_C=-1\text{A}$		30		MHz
C_{ob}	Output Capacitance	$V_{CB}=-10\text{V}, f=1\text{MHz}$		360		pF

* Pulse Test: Pulse Width=20 μs , Duty Cycle \leq 2%**Ordering Information**

Part Number	Marking	Package	Packing Method	Remarks
2SA1962RTU	A1962R	TO-3P	TUBE	hFE1 R grade
2SA1962OTU	A1962O	TO-3P	TUBE	hFE1 O grade
FJA4213RTU	J4213R	TO-3P	TUBE	hFE1 R grade
FJA4213OTU	J4213O	TO-3P	TUBE	hFE1 O grade

Typical Characteristics

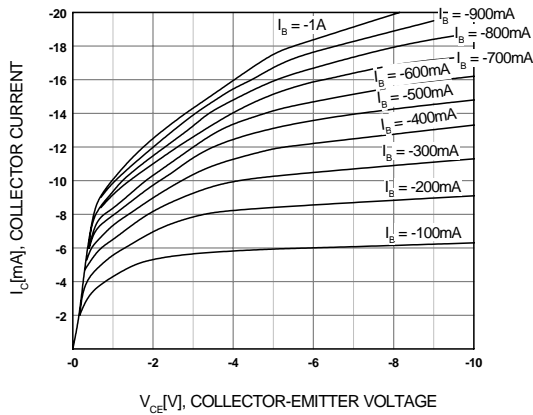


Figure 1. Static Characteristic

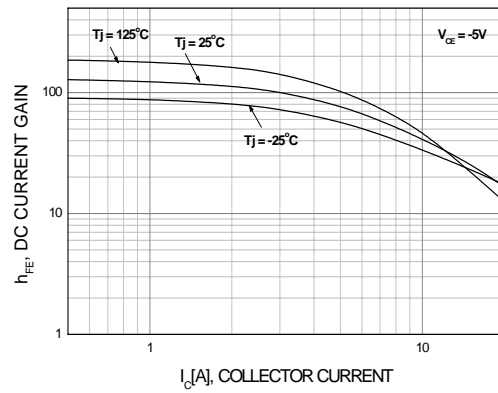


Figure 2. DC current Gain

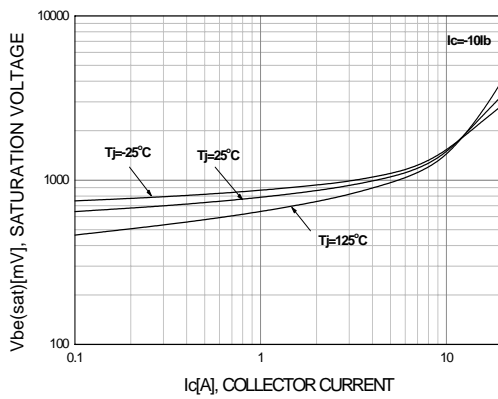


Figure 3. Base-Emitter Saturation Voltage

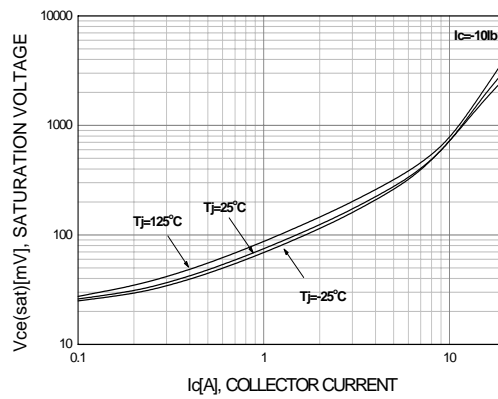


Figure 4. Collector-Emitter Saturation Voltage

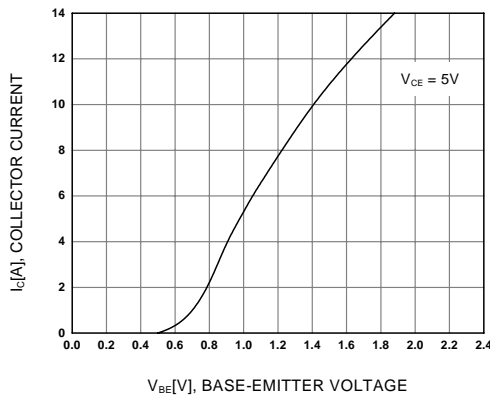


Figure 5. Base-Emitter On Voltage

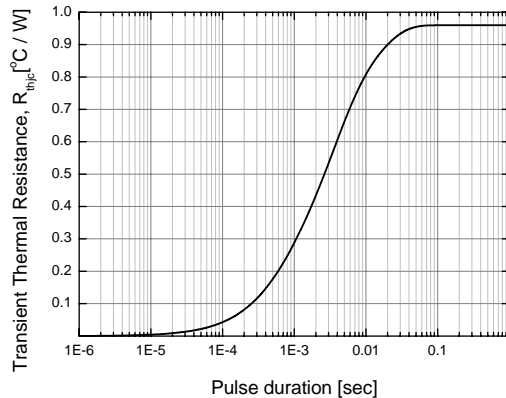


Figure 6. Thermal Resistance

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Typical Characteristics

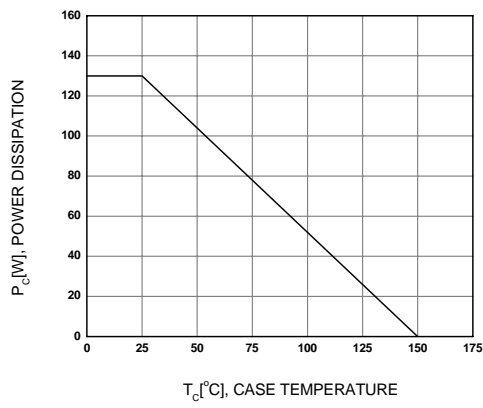


Figure 7. Power Derating

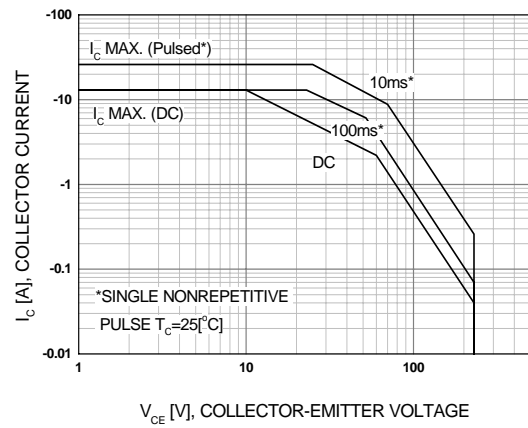
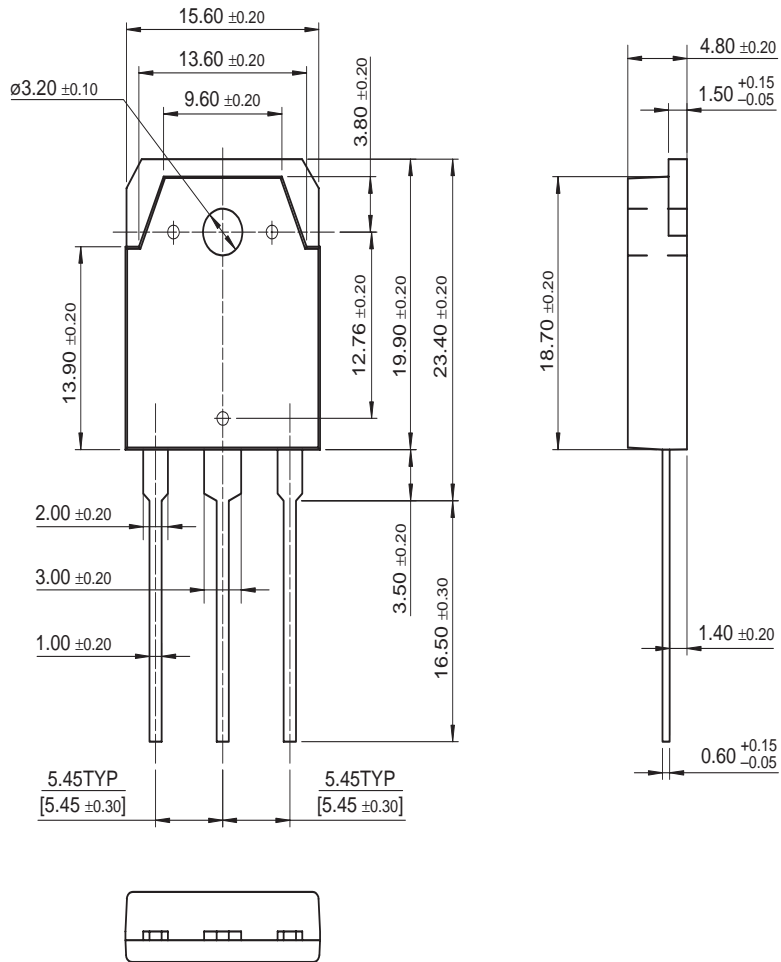


Figure 8. Safe Operating Area

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Package Dimensions

TO-3P



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Dimensions in Millimeters



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- A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

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